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## NOTICE OF ALLOWANCE AND FEE(S) DUE

30678 7590 09/30/2011  
CONNOLLY BOVE LODGE & HUTZ LLP  
1875 EYE STREET, N.W.  
SUITE 1100  
WASHINGTON, DC 20006

EXAMINER

NOLAN, JASON MICHAEL

ART UNIT

PAPER NUMBER

1626

DATE MAILED: 09/30/2011

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,282

04/19/2006

Rainer Papp

13111-00038-US1

1949

TITLE OF INVENTION: STABILIZATION OF HYDROFORMYLATION CATALYSTS BASED ON PHOSPHORAMIDE LIGANDS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1740	\$300	\$0	\$2040	12/30/2011

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

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III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

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**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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30678 7590 09/30/2011  
**CONNOLLY BOVE LODGE & HUTZ LLP**  
1875 EYE STREET, N.W.  
SUITE 1100  
WASHINGTON, DC 20006

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(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,282 04/19/2006 Rainer Papp 13111-00038-US1 1949

**TITLE OF INVENTION:** STABILIZATION OF HYDROFORMYLATION CATALYSTS BASED ON PHOSHAMIDE LIGANDS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1740	\$300	\$0	\$2040	12/30/2011

EXAMINER	ART UNIT	CLASS-SUBCLASS
NOLAN, JASON MICHAEL	1626	568-454000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_  
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_  
3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

**NOTE:** The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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10/576,282	04/19/2006	Rainer Papp	13111-00038-US1	1949

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EXAMINER
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NOLAN, JASON MICHAEL

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1626

DATE MAILED: 09/30/2011

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 150 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 150 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/576,282	PAPP ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	JASON M. NOLAN	1626	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 05/20/2011.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 2-8, 10-14, & 16-23 (now 1-20).
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date <u>5/20/11; 6/7/11</u></li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date ____.</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other ____.</li> </ol> |
|---|--|

### **DETAILED ACTION**

A request for continued examination under 37 CFR § 1.114, including the fee set forth in 37 CFR § 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR § 1.114, and the fee set forth in 37 CFR § 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR § 1.114.

Applicant's submission filed on May 20, 2011 has been entered. As filed, Claims 2-8, 10-14, & 16-23 are pending; of which, Claim 22 is currently amended and Claim 23 is new. Claims 1, 9, & 15 are cancelled.

### ***Information Disclosure Statement***

Applicant's information disclosure statements (IDS), filed on May 20, 2011 and June 7, 2011 have been considered. Please refer to Applicant's copies of the 1449 submitted herein.

### ***Response to Amendments & Reasons for Allowance***

Applicant's amendments to Claim 22 and addition of Claim 23 have been fully considered and are entered. Further, Applicant's remarks have been fully considered. It is Applicant's contention that the Examiner should reconsider the obviousness rejection based on the following: that the Ahlers reference does not teach the fractionation process that is claimed in the instant application; that that one of ordinary skill in the art would not expect the stabilization of the instant invention to be successful

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in the absence of synthetic gas; that the Examiner has not explained why the unexpected results provided in the instant disclosure are not dispositive; that one of ordinary skill in the art would not rely on the Jackstell and Ahlers references as a starting place for improving the stability of phosphoramidite ligands; and, that even though bases have been used in the past to stabilize hydroformylation catalysts one of ordinary skill in the art would not have expected the same results in this case because the ligands contain nitrogen atoms.

In response, the Examiner has endeavored to reconsider the obviousness rejection in view of all evidence and arguments of record. Many of Applicant's arguments originate with the specification (surprising results & improved stability). Those points are considered below. Applicant's argument that the prior art teaches away is unfounded. A teaching away requires the reference to dissuade one of ordinary skill in the art from attempting a particular path. Here, the prior art references merely have a different object (e.g., improve regiochemistry), which is not a teaching away. Nevertheless, Applicants remarks have been fully considered in light of the specification and the prior art of record.

In the instant specification, Applicant asserts that they have discovered a hydroformylation process that is an improvement over the prior art because it provides for higher stability of the catalyst and permits a more efficient and sustainable process at industrial scales. The improvement originates from that addition of a base to the reaction, which facilitates the improved stability. The ligands used in the instant process were previously discovered and contain nitrogen heterocycles (example 1 on page 36).

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The literature discloses that the use of a base, such as trialkylamines or triarylamine or pyridine, will stabilize a hydroformylation process. In sum, the literature discloses the process, the preferred metals for catalysis, the preferred ligands, and that a base may improve the hydroformylation process.

In light of this background, Applicants assert that the instantly claimed process is an improvement and would not have been suggested by the prior art because the preferred ligand (e.g., compound 1 on page 36) itself contains a nitrogen atom and nitrogen atoms are basic in nature. Accordingly, a question for patentability is: in light of the prior art, are the improvements unexpected and enough evidence to shift a conclusion of obvious to patentable?

The process of hydroformylation is an old process; however, the use of metal ligands that contain a P-N bond was a relatively recent discovery by Trzeciak in 1997. A review of this class of ligands was provided by Jackstell in 2001. The instantly preferred ligand (i.e., compound 1 on page 36) was discovered by the Applicants in 2002 (WO 02/083695). The instant process, which illustrates an improvement over the previous process, was made by Applicants in 2003 (Germany 103 49 343.3).

The ability to stabilize the hydroformylation process with a base has been known for some time. For instance, US 4,567,306 (1986) discloses the use of tertiary amines and states "The use of tertiary amines in hydroformylation media has been suggested previously in a number of publications. . . ." (col. 3, ll. 49-51) See also, US 5,731,472 (claims 18 & 19, col. 56). Accordingly, the metal ligand and method for stabilization were known generally at the time of invention.

However, the Examiner is unable to find any literature precedent for the use of a base in a catalytic system comprising a metal ligand that has a P-N bond. Applicants assert that this result is unexpected and have provided examples, including comparative examples that illustrate an improvement. It is further noted by the Examiner that the chemical reactions, and in particular catalyzed chemical reactions, are generally recognized as being unpredictable and/or having unpredictable factors. *See, e.g., In re Carleton*, 599 F.2d 1021, 202 USPQ 165, 170 (CCPA 1979) ("Although there is a vast amount of knowledge about general relationships in the chemical arts, chemistry is still largely empirical, and there is often great difficulty in predicting precisely how a given compound will behave."); *In re Fisher*, 427 F.2d 833, 839 (CCPA 1970) ("In cases involving unpredictable factors, *such as most chemical reactions* and physiological activity, the scope of enablement obviously varies inversely with the degree of unpredictability of the factors involved (emphasis added.); *In re Bowden*, 183 F.2d 115, 86 USPQ 419, 423 ("chemical reactions frequently are unpredictable"). *See, e.g., Corona Cord Tire Co. v. Dovan Chemical Corp.*, 276 US 358, 368-69 (1928) ("The catalytic action of an accelerator cannot be forecast by its chemical composition, for such action is not understood and is not known except by actual test."); *In re Doumani*, 281 F.2d 215, 217 (CCPA 1960) ("[C]atalytic effects are not ordinarily predictable with certainty."). The effect of modifying a prior art process with the use of a different catalyst was held to be unpredictable. *Ex parte Berger*, 108 USPQ 236, 237 (BPAI 1952) ("We are here dealing with catalysts whose activity is not predictable.").

The predictability of substituting one catalyst for another must be determined on the basis of the circumstances in each case. The proper inquiry is whether there is a close relationship between two particular catalysts such that when one of them is found to be a suitable catalyst for certain purposes, it will suggest the probability that the other will also be suitable. *In re Doumani* at 217.

Notwithstanding the general unpredictability of the chemical arts, the Federal Circuit indicated that "Obviousness does not require absolute predictability of success . . . all that is required is a reasonable expectation of success." *In re O'Farrell*, 853 F.2d 894, 903-904 (Fed. Cir. 1988). In the case of chemical reactions, the unpredictability of the art is recognized even though a person having ordinary skill in the art is highly skilled. The level of ordinary skill in the art may be found by inquiring into: (1) the type of problems encountered in the art; (2) prior art solutions to those problems; (3) the rapidity with which innovations are made; (4) the sophistication of the technology; and (5) the education level of active workers in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Industries, Inc.*, 807 F.2d 855, 962 (Fed. Cir. 1986). All of those factors may not be present in every case, and one or more of them may predominate. *Envtl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696 (Fed. Cir. 1983).

Based on the typical education level of active workers in the chemical art, as well as the high degree of sophistication required to solve problems encountered in the art, the Examiner finds that a person of ordinary skill in the art would have at least a college degree in chemistry and at least four years of work experience; i.e., a masters- or doctorate-level chemist.

Accordingly, it remains the question of whether one of ordinary skill in the art would have had a reasonable expectation of success with respect to the addition of a base to a hydroformylation process in which the catalytic system already contains a basic ligand. This question must be considered in light of the evidence of nonobviousness provided in Applicant's disclosure, in light of the unpredictability of the art even though the skill level of the artisan is high, and in light of the state of the art; i.e., the relative infancy of the particular metal ligands containing a P-N bond(s).

Examples 2, 9, & 13 are comparative experiments; i.e., processes that do not contain a base for stabilization. Examples 3, 4, 6-8, & 10 are experiments run with a base in the reaction medium, which establish that the base does not harm the reaction. In other words, a similar conversion, yield, and percentage of the desired product are attained in the instant process as compared to the prior art process, which illustrates a proof of concept and suggests that the instant process should be further studied for its potential efficiency improvements.

Examples 3, 5, & 11 are degradation experiments. Example 3 illustrates that compound 1 is degraded by 18% after 24 hours at a pressure of 28 bar, and 42% after 24 more hours at a pressure of 3 bar. Example 5 illustrates that compound 1 is degraded by 4% after 24 hours at a pressure of 28 bar, and 23% after 24 more hours at a pressure of 3 bar. Example 11 illustrates that compound 1 is degraded by 3% after 24 hours at a pressure of 28 bar, and 29% after 24 more hours at a pressure of 3 bar. These experiments establish that the instant process proceeds with some degradation of the preferred ligand (compound 1 on p. 36). See also, Table 1.

Example 14 is hydroformylation experiments wherein the amount of remaining ligand (compound 1) is measured over a period of 40 days. Example 14 illustrates that the ligand is detectable in significant amounts after 40 days (2150 ppm as compared to 7740 ppm at the start of the process). Comparative Example 13 illustrates that the ligand is detectable after six days (3100 ppm as compared to 15,000 ppm at the start of the process), but that the ligand is not detectable after eight days (i.e., 0 ppm). Accordingly, it is argued that a base stabilizes the catalytic fluid. In other words, without the addition of a base, the catalytic fluid would degrade during use in a chemical reaction. The examples illustrate that the addition of the base to the system permits a continuous process over several weeks as compared to the process that does not contain a base, which may only be run continuously for one week.

The Examiner finds that the instantly claimed hydroformylation process is non-obvious in light of the unexpected benefit provided by the addition of a base as described in the examples set forth in the specification, and the instant claims are patentable over the prior art. Accordingly, the rejection of Claims 2-8, 10-14, & 16-22 under 35 U.S.C. § 103 is herein withdrawn.

As an aside, Claim 13 recites: “A method of *stabilizing* a catalytically active fluid . . . which comprises bringing the fluid into contact with at least one base . . .” The term *stabilizing* is a relative term; i.e., a term of degree. When a term of degree is used in the claim, an examiner must determine whether the specification provides some standard for measuring that degree. If the specification does not provide some standard for measuring that degree, a determination must be made as to whether one

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of ordinary skill in the art could nevertheless ascertain the scope of the claim (*e.g.*, a standard that is recognized in the art for measuring the meaning of the term of degree).

A claim is not indefinite if the specification provides examples or teachings that can be used to measure a degree even without a precise numerical measurement (*e.g.*, a figure that provides a standard for measuring the meaning of the term of degree).

During prosecution, an applicant may also overcome an indefiniteness rejection by submitting a declaration under 37 CFR § 1.132 showing examples that meet the claim limitation and examples that do not.

The instant specification provides examples by which one of ordinary skill in the art may be able to determine the requisite degree of the term *stabilizing* and the unexpected nature of the results achieved. Examples 3, 5, & 11 are degradation experiments. Example 3 illustrates that compound 1 is degraded by 18% after 24 hours at a pressure of 28 bar, and 42% after 24 more hours at a pressure of 3 bar. Example 5 illustrates that compound 1 is degraded by 4% after 24 hours at a pressure of 28 bar, and 23% after 24 more hours at a pressure of 3 bar. Example 11 illustrates that compound 1 is degraded by 3% after 24 hours at a pressure of 28 bar, and 29% after 24 more hours at a pressure of 3 bar. The Examiner finds that these experiments establish that the requisite degree of the relative term *stabilizing* and that one of ordinary skill in the art could ascertain the scope of the instant claims.

### ***Conclusion***

Claims 2-8, 10-14, & 16-23 are allowed and renumbered Claims 1-20.

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***Telephone Inquiry***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Nolan whose telephone number is (571) 272-4356 and e-mail is [Jason.Nolan@uspto.gov](mailto:Jason.Nolan@uspto.gov). The examiner can normally be reached Monday - Friday (9:00AM - 5:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph M<sup>c</sup>Kane, may be contacted at [Joseph.McKane@uspto.gov](mailto:Joseph.McKane@uspto.gov) or (571) 272-0699.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system, (Private PAIR or Public PAIR). Status information for unpublished applications is available through Private PAIR only. For information about the PAIR system, see <http://pair-direct.uspto.gov>. For questions on Private PAIR system, contact the Electronic Business Center at (866) 217-9197.

/Jason M. Nolan/

Examiner, Art Unit 1626